

WHAT IS CLAIMED IS:

1. A printing method for processing print data generated by a host computer, the printing method comprising:

acquiring the print data from the host computer;

selecting a unit image to be used as a component of a background image;

laying out multiple copies of the selected unit image in a selected layout pattern;

selecting a filter for delineating an image area of the selected layout pattern or each copy in the layout pattern;

filtering the selected layout pattern or each copy in the layout pattern using the selected filter to determine where the copies of the selected unit image are to be printed to produce the background image data;

adding the background image data to the print data to produce print data with an embedded background image; and

printing the print data with the embedded background image on receipt paper.

2. A printing method as described in claim 1, further comprising receiving from the host computer a configuration command containing configuration parameters for producing the background image, processing the selected unit image according to the configuration parameters to generate the background image data, and based thereon producing the print data with the embedded background image.

3. A printing method as described in claim 2, wherein the configuration command contains information specifying a print color for the background image.

4. A printing method as described in claim 2, wherein the configuration command contains information specifying a data file of the selected unit image.

5. A printing method as described in claim 2, wherein the configuration command contains information specifying a data file of the selected filter.

6. A printing method as described in claim 2, wherein the configuration command contains information specifying an enlargement factor of the selected unit image.

7. A printing method as described in claim 2, wherein the configuration command contains information specifying the selected layout pattern for arranging the selected unit image.

8. A printing method as described in claim 2, wherein the configuration command contains information specifying a layout pitch of the selected unit image.

9. A printing method as described in claim 2, wherein the configuration command is generated by a printer driver embedded in the host computer.

10. A computer-readable medium embodying a printing program for processing print data, the program comprising:

instructions for acquiring the print data from the host computer;

instructions for selecting a unit image to be used as a component of a background image;

instructions for laying out multiple copies of the selected unit image in a selected layout pattern;

instructions for selecting a filter for delineating an image area of the selected layout pattern or each copy in the layout pattern;

instructions for filtering the selected layout pattern or each copy in the layout pattern using the selected filter to determine where the copies of the selected unit image are to be printed to produce the background image data;

instructions for adding the background image data to the print data to produce print data with an embedded background image; and

instructions for printing the print data with the embedded background image on receipt paper.

11. A computer-readable medium as described in claim 10, further comprising instructions for receiving from the host computer a configuration command containing configuration parameters for producing the background image, instructions for processing the selected unit image according to the configuration parameters to generate the background image data, and instructions for producing the print data with the embedded background image.

12. A computer-readable medium as described in claim 11, wherein the configuration command contains information specifying a print color for the background image.

13. A computer-readable medium as described in claim 11, wherein the configuration command contains information specifying a data file of the selected unit image.

14. A computer-readable medium as described in claim 11, wherein the configuration command contains information specifying a data file of the selected filter.

15. A computer-readable medium as described in claim 11, wherein the configuration command contains information specifying an enlargement factor of the selected unit image.

16. A computer-readable medium as described in claim 11, wherein the configuration command contains information specifying the selected layout pattern for arranging the selected unit image.

17. A computer-readable medium as described in claim 11, wherein the configuration command contains information specifying a layout pitch of the selected unit image.

18. A computer-readable medium as described in claim 11, wherein the configuration command is generated by a printer driver embedded in the host computer.

19. A printing apparatus for processing print data generated by a host computer, the printing apparatus comprising:

- an input terminal configured to acquire the print data from the host computer;

- a background image data processor including

- a unit image selection module configured to select a unit image to be used as a component of a background image,

- a layout module configured to lay out multiple copies of the selected unit image in a selected layout pattern,

- a filter selection module configured to select a filter for delineating an image area of the selected layout pattern or each copy in the layout pattern,
- and

- a filtering module configured to apply the selected filter to the selected layout pattern or each copy in the layout pattern to determine where the copies of the selected unit image are to be printed to produce the background image data;

- a generator configured to add the background image data to the print data to produce print data with an embedded background image; and

- a printing unit configured to print the print data with an embedded background image on receipt paper.

20. A printing apparatus as described in claim 19, wherein the printing unit is capable of color printing using a primary color and a secondary color different from the primary color, and is configured to print the print data using the primary color and to print the background image data using the secondary color.

21. A printing apparatus as described in claim 20, wherein the background image data is generated according to configuration parameters specified by a configuration command received from the host computer.
22. A printing apparatus as described in claim 20, wherein the filter is in the form of an image data file.
23. A printing apparatus as described in claim 20, wherein the filter is in a form of an algorithm file representing a shape.
24. A printing apparatus as described in claim 20, wherein the filter is in a form of a functional expression defining a shape.
25. A printing apparatus as described in claim 21, wherein the configuration command contains information specifying a print color for the background image.
26. A printing apparatus as described in claim 21, further comprising a storage medium configured to store a plurality of unit images as data files, and wherein the configuration command contains information specifying the data file corresponding to the selected unit image.
27. A printing apparatus as described in claim 21, wherein the configuration command contains a command specifying the selected filter.
28. A printing apparatus as described in claim 21, wherein the configuration command contains information specifying an enlargement factor of the selected unit image.
29. A printing apparatus as described in claim 21, further comprising a storage medium configured to store a plurality of layout patterns, and wherein the configuration command contains information specifying a selected layout pattern.

30. A printing apparatus as described in claim 21, wherein the configuration command contains information specifying a layout pitch of the selected unit image.

31. A printing apparatus as described in claim 21, wherein the configuration command is generated by a printer driver embedded in the host computer.

32. A printer driver to be used in a host computer connected to a printing apparatus, the printer driver comprising:

- a print acquisition module configured to acquire print data from an application program executed by the host computer;

- a background image data configuration module including

- a unit image selection module configured to select a unit image to be used as a component of a background image,

- a layout module configured to lay out multiple copies of the selected unit image in a selected layout pattern,

- a filter selection module configured to select a filter for delineating an image area of the selected layout pattern or each copy in the layout pattern,

- a filtering module configured to apply the selected filter to the selected layout pattern or each copy in the layout pattern to determine where the copies of the selected unit image are to be printed to produce the background image data, and

- a generator module configured to add the background image data to the print data to produce print data with an embedded background image; and

- a transmission unit configured to send the print data with an embedded background image to a printing apparatus.

33. A POS terminal, comprising:

- a printing apparatus comprising

an input terminal configured to acquire the print data from the host computer,

a background image data processor including

a unit image selection module configured to select a unit image to be used as a component of a background image,

a layout module configured to lay out multiple copies of the selected unit image in a selected layout pattern,

a filter selection module configured to select a filter for delineating the image area of the selected layout pattern or each copy in the layout pattern, and

a filtering module configured to apply the selected filter to the selected layout pattern or each copy in the layout pattern to determine where the copies of the selected unit image are to be printed to produce the background image data,

a generator configured to add the background image data to the print data to produce print data with an embedded background image, and

a printing unit configured to print the print data with an embedded background image to receipt paper; and

a terminal device functioning as a host computer.

34. A POS terminal as described in claim 33, wherein the terminal device includes a printer driver and a printing apparatus.

35. A POS system, comprising:

at least one POS terminal comprising

a printing apparatus comprising

an input terminal configured to acquire the print data from the host computer,

a background image data processor including

a unit image selection module configured to select a unit image to be used as a component of a background image,

a layout module configured to lay out multiple copies of the selected unit image in a selected layout pattern,

a filter selection module configured to select a filter for delineating the image area of the selected layout pattern or each copy in the layout pattern, and

a filtering module configured to apply the selected filter to the selected layout pattern or each copy in the layout pattern to determine where the copies of the selected unit image are to be printed to produce the background image data,

a generator configured to add the background image data to the print data to produce print data with an embedded background image, and

a printing unit configured to print the print data with an embedded background image to receipt paper, and

a terminal device functioning as a host computer; and

a POS server connected to each POS terminal over a network for managing the POS terminals.

36. A printing apparatus for fetching print data regarding payment information that is generated by a host computer and based on input data relating to a merchandise sale, the printing apparatus comprising:

a command interpreter configured to receive and analyze commands from the host computer;

a print data processor configured to process fetched print data relating to payment transaction information according to a received print command;

a background image data processor configured to process background image data according to a received configuration command for setting background image data;

a print-data-with-background-image generator configured to combine the fetched print data with the background image data for printing according to a command for printing print-data-with-background-image;

wherein, when the command for printing print-data-with-background-image is fetched, a pre-selected background image produced by the background image data processor and the fetched print data for payment transaction are synthesized to form the print-data-with-background-image.